

What is claimed is:

1. A cooling suit to be worn on a wearer, comprising:
at least one air inlet configured to introduce
outside air;

at least one parallel airstream generation means for
introducing the outside air through the or each air inlet
to generate parallel airstreams which are substantially
parallel to the wearer's body;

a guide sheet simultaneously serving as a garment and
for guiding the parallel airstreams generated by the or
each parallel airstream generation means, parallelly to the
wearer's body;

at least one air exit portion configured to discharge
the parallel airstreams to the exterior; and

electric-power source means for supplying electric
power to the or each parallel airstream generation means;

wherein the or each parallel airstream generation
means cooperatively blows air of a total amount of about
 $5m^3/H$ to $500m^3/H$ into between said guide sheet and an
undergarment or wearer's body to cause positive pressures
between said guide sheet and the undergarment or wearer's
body to thereby produce an air flow space therebetween, and
the or each parallel airstream generation means causes the
blown air to flow through said air flow space to thereby
discharge moisture due to perspiration to the exterior and
to thereby constantly feed fresh outside air into said air
flow space, thereby largely intensifying conditions where

perspiration can be evaporated.

2. The cooling suit of claim 1, wherein the or each parallel airstream generation means is detachably attached to said guide sheet.

3. The cooling suit of claim 1 or 2, wherein the or each parallel airstream generation means comprises a sideward-flow fan.

4. The cooling suit of any one of claims 1, 2, and 3, further comprising a fan guard attached to an air inlet of the or each parallel airstream generation means.

5. The cooling suit of any one of claims 1, 2, 3, and 4, wherein the or each parallel airstream generation means comprises: a propeller fan or mixed-flow fan; and a parallel airstream conversion device; and

wherein said propeller fan or mixed-flow fan and said parallel airstream conversion device are integrated with each other.

6. The cooling suit of any one of claims 1, 2, 3, 4, and 5, wherein the or each parallel airstream generation means includes a parallel airstream deliver portion formed with a fan guard.

7. The cooling suit of any one of claims 1, 2, 3, 4, 5, and 6, further comprising suspending means for suspending the or each parallel airstream generation means from the above so that parallel airstreams delivered by the or each parallel airstream generation means are made substantially parallel to the wearer's body.

8. The cooling suit of any one of claims 1, 2, 3, 4, 5, 6, and 7, further comprising fixation means provided for fixing the or each parallel airstream generation means to the wearer's body or undergarment.

9. The cooling suit of any one of claims 1, 2, 3, 4, 5, 6, 7, and 8, wherein said electric-power source means comprises a fuel cell.

10. The cooling suit of any one of claims 1, 2, 3, 4, 5, 6, 7, 8, and 9, wherein the or each parallel airstream generation means are provided by two in total number which include one and the other provided at the right and left of a lower portion of a back side of the wearer, respectively.

11. The cooling suit of any one of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10, wherein the or each air exit portion is an end of said guide sheet simultaneously serving as the garment.

12. The cooling suit of any one of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11, wherein the or each air exit portion comprises a sheet having a larger air permeability constituting a portion of said guide sheet simultaneously serving as the garment.

13. The cooling suit of any one of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, further comprising spacers attached to said guide sheet simultaneously serving as the garment, at important locations of said guide sheet, respectively.

14. The cooling suit of claim 8, wherein said

fixation means includes, attached thereto: the or each parallel airstream generation means; an electric-power source for supplying electric power to the or each parallel airstream generation means; and connection means for electrically connecting the or each parallel airstream generation means to said electric-power source.

15. The cooling suit of claim 14, wherein said fixation means is made of a material having a low water absorptivity.

16. The cooling suit of claim 15, wherein said fixation means is formed of a material performed an antifungal process.

which is easily washable.

MEANS FOR SOLVING THE PROBLEM

[0009] To achieve the object, the invention recited in Claim 1 resides in a cooling suit to be worn on a wearer, comprising: at least one air inlet configured to introduce outside air; at least one parallel airstream generation means having: vanes; a motor for rotating said vanes; a front face formed with an air suction port; and a side surface formed with a parallel airstream deliver portion; the or each parallel airstream generation means being provided for introducing outside air from said air suction port and for blowing the air substantially in a sideward direction from said parallel airstream deliver portion to generate parallel airstreams which are substantially parallel to the wearer's body; a guide sheet simultaneously serving as a garment and for guiding the parallel airstreams generated by the or each parallel airstream generation means, parallelly to the wearer's body; at least one air exit portion configured to discharge the parallel airstreams to the exterior; and electric-power source means detachably provided on said guide sheet and for supplying electric power to the or each parallel airstream generation means; wherein the or each air inlet is formed in said guide sheet; wherein the or each parallel airstream generation means is detachably provided inside said guide sheet so that said air suction port of the or each parallel

airstream generation means is opposed to the or each
associated air inlet formed in said guide sheet, and so
that said parallel airstream deliver portion of the or each
parallel airstream generation means is positioned inside
said guide sheet; and wherein the or each parallel
airstream generation means cooperatively blows air of a
total amount of about 10m³/H to 500m³/H into between said
guide sheet and an undergarment or wearer's body to cause
positive pressures between said guide sheet and the
undergarment or wearer's body to thereby produce an air
flow space therebetween, and the or each parallel airstream
generation means causes the blown air to flow through said
air flow space to thereby discharge moisture due to
perspiration to the exterior and to thereby constantly feed
fresh outside air into said air flow space, thereby largely
intensifying conditions where perspiration can be
evaporated.

EFFECT OF THE INVENTION

[0010] The cooling suit according to the present invention is capable of causing a large amount of air to flow between an undergarment or wearer's body and a guide sheet so as to largely extend an effective area under the influence of a physiological cooling ability of the wearer to thereby cool the wearer's body.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

What is claimed is:

1. (Amended) A cooling suit to be worn on a wearer, comprising:

at least one air inlet configured to introduce outside air;

at least one parallel airstream generation means having: vanes; a motor for rotating said vanes; a front face formed with an air suction port; and a side surface formed with a parallel airstream deliver portion; the or each parallel airstream generation means being provided for introducing outside air from said air suction port and for blowing the air substantially in a sideward direction from said parallel airstream deliver portion to generate parallel airstreams which are substantially parallel to the wearer's body;

a guide sheet simultaneously serving as a garment and for guiding the parallel airstreams generated by the or each parallel airstream generation means, parallelly to the wearer's body;

at least one air exit portion configured to discharge the parallel airstreams to the exterior; and

electric-power source means detachably provided on said guide sheet and for supplying electric power to the or each parallel airstream generation means;

wherein the or each air inlet is formed in said guide sheet;

wherein the or each parallel airstream generation

means is detachably provided inside said guide sheet so
that said air suction port of the or each parallel
airstream generation means is opposed to the or each
associated air inlet formed in said guide sheet, and so
that said parallel airstream deliver portion of the or each
parallel airstream generation means is positioned inside
said guide sheet; and

wherein the or each parallel airstream generation
means cooperatively blows air of a total amount of about
10m³/H to 500m³/H into between said guide sheet and an
undergarment or wearer's body to cause positive pressures
between said guide sheet and the undergarment or wearer's
body to thereby produce an air flow space therebetween, and
the or each parallel airstream generation means causes the
blown air to flow through said air flow space to thereby
discharge moisture due to perspiration to the exterior and
to thereby constantly feed fresh outside air into said air
flow space, thereby largely intensifying conditions where
perspiration can be evaporated.

2. (Cancelled).

3. (Amended) The cooling suit of claim 1, wherein the
or each parallel airstream generation means comprises a
sideward-flow fan.

4. (Amended) The cooling suit of claim 1 or 3,
further comprising a fan guard attached to an air inlet of
the or each parallel airstream generation means.

5. (Amended) The cooling suit of any one of claims 1,

3, and 4, wherein the or each parallel airstream generation means comprises: a propeller fan or mixed-flow fan; and a parallel airstream conversion plate; and

wherein said propeller fan or mixed-flow fan and said parallel airstream conversion plate are integrated with each other.

6. (Amended) The cooling suit of any one of claims 1, 3, 4, and 5, wherein the or each parallel airstream generation means includes a parallel airstream deliver portion formed with a fan guard.

7. (Amended) The cooling suit of any one of claims 1, 3, 4, 5, and 6, further comprising suspending means for suspending the or each parallel airstream generation means from the above so that parallel airstreams delivered by the or each parallel airstream generation means are made substantially parallel to the wearer's body.

8. (Amended) The cooling suit of any one of claims 1, 3, 4, 5, 6, and 7, further comprising fixation means provided for fixing the or each parallel airstream generation means to the wearer's body or undergarment.

9. (Amended) The cooling suit of any one of claims 1, 3, 4, 5, 6, 7, and 8, wherein said electric-power source means comprises a fuel cell.

10. (Amended) The cooling suit of any one of claims 1, 3, 4, 5, 6, 7, 8, and 9, wherein the or each parallel airstream generation means are provided by two in total number which include one and the other provided at the

right and left of a lower portion of a back side of the wearer, respectively.

11. (Amended) The cooling suit of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, and 10, wherein the or each air exit portion is an end of said guide sheet simultaneously serving as the garment.

12. (Amended) The cooling suit of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, 10, and 11, wherein the or each air exit portion comprises a sheet having a larger air permeability constituting a portion of said guide sheet simultaneously serving as the garment.

13. (Amended) The cooling suit of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, further comprising spacers attached to said guide sheet simultaneously serving as the garment, at important locations of said guide sheet, respectively.

14. The cooling suit of claim 8, wherein said fixation means includes, attached thereto: the or each parallel airstream generation means; an electric-power source for supplying electric power to the or each parallel airstream generation means; and connection means for electrically connecting the or each parallel airstream generation means to said electric-power source.

15. The cooling suit of claim 14, wherein said fixation means is made of a material having a low water absorptivity.

16. The cooling suit of claim 15, wherein said

fixation means is formed of a material performed an antifungal process.